

## **REMARKS**

### **Rejections under 35 U.S.C. §112, first paragraph**

Claims 21-38 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to satisfy the written description requirement. The Examiner asserts that the term “and maintaining pressure” recited in claim 21 is not supported by the specification at page 5, lines 9-10.

In response, Applicant directs Examiner to page 5, lines 12-13 which state:

“The pressure vessel is maintained at a pressure higher than the equilibrium pressure for the solvent system at the selected temperature.”

The location of this statement was misstated in the amendment filed on January 14, 2008. With this correction, Applicant respectfully requests withdrawal of this rejection.

### **Rejections under 35 U.S.C. § 103**

Claims 21-38 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yang et al. (U.S. Patent No. 6,036,726).

Applicant respectfully traverses.

To establish a proper case of obviousness, one must apply the *Graham v. John Deere* factors. These factors include:

- (A) *Determining the scope and contents of the prior art;*
- (B) *Ascertaining the differences between the prior art and the claims in issue;*
- (C) *Resolving the level of ordinary skill in the pertinent art; and*
- (D) *Evaluating evidence of secondary considerations.*

See *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966).

When the *John Deere* factors are considered in light of the rejection presented, one can only conclude the instantly claimed invention is non-obvious for the following reasons.

The Examiner asserts that Yang et al. teaches recycling post-consumer materials containing polyamides and thus the use of post-consumer materials in Example 11 would be

*prima facie* obvious. First, Applicant respectfully points out that Example 11 does not utilize post-consumer materials but rather the nylon used is white, virgin, fiber (see col. 13, lines 1-2). Further, Tables 6, 7, and 8 all indicate that no dissolution of fiber was observed at temperatures below 160°C (see Tables 6, 7, and 8 tests 1, 4 of each observing fiber, whereas examples 2, 3, 5, and 6 indicate dissolution of the fiber by the phrase “100% dissolved”).

The Examiner asserts that claim 38 recites a minimum of 82% dissolution, and that Applicant had failed to show that Tests 1 and 4 of Table 6 do not have said 82% dissolution. Applicant respectfully disagrees and directs Examiner to col. 13, lines 55-58 in which Yang et al. indicates that “[t]he 90% isopropanol solvent was unable to dissolve the nylon at either 160 or 180°C within a 5 minute period. The n-butanol solvent was unable to dissolve the nylon at 160°C . . .” The results for these tests are located in Table 7, tests 2a, 5a, and 6a and Table 8, test 5a. The observation listed in these columns is either “fiber” or “both fiber and ppt.”. As indicated above, all tests conducted at 140°C observed “fiber” which indicates no dissolution of the nylon (Tables 6-8, tests 1 and 4). Further, in contrast to the method claimed by Applicant, the method of Yang et al. described in the Examples is concerned with varying the temperature while maintaining a constant pressure (250 psig). Instead of increasing the pressure of the solution to a pressure above the vapor pressure of the solvent, Yang et al. responds to the lack of dissolution of the virgin nylon in Example 11 by adding water to the n-butanol and isopropanol solvents. Yang et al. does not suggest to vary the pressure in order to facilitate the dissolution of the nylon.

Applicant claims a method for recovering nylon from waste materials comprising nylon in which the waste material is contacted with an alkanol-containing solvent at an elevated temperature between 130°C to 155°C at a pressure higher than the equilibrium vapor pressure and between 250 psig to 600 psig. Applicant asserts that Yang et al. fails to teach a method of

even dissolving *virgin nylon*, much less waste materials, at a temperature below 160°C. Yang et al. discloses no method that successfully dissolves nylon in any form at a temperature below 160°C (see Example 11). Thus, one of ordinary skill in the art reading Yang et al. would be discouraged from attempting to dissolve nylon at temperatures below 160°C, much less at a temperature in the claimed range of the instant invention (130°C to 155°C). As Yang et al. was unsuccessful in dissolving virgin nylon in any of the alkanols tested in Example 11, one of ordinary skill in the art would not expect to be successful in dissolving more complex post-consumer waste materials containing nylon at temperatures below 160°C. As such, Applicant respectfully submits that Yang et al. teaches away from attempting to dissolve nylon at temperatures below 160°C. Therefore, Applicant submits that the Examiner has failed to present a *prima facie* case of obviousness over Yang et al. as Yang et al. does not disclose the method claimed by the present invention and, in fact, teaches away from the use of temperatures below 160°C.

Withdrawal of the rejection is warranted and respectfully requested.

**CONCLUSION**

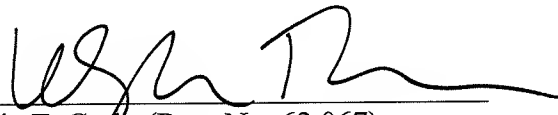
With the above remarks, Applicants believe that all objections and/or rejections have been obviated. Thus, each of the claims remaining in the application is in condition for immediate allowance. A passage of the instant invention to allowance is earnestly solicited.

Applicants believe that no fee is necessary, however, should a fee be deemed to be necessary, the Commissioner is hereby authorized to charge any fees required by this action or any future action to Deposit Account No. 16-1435.

Should the Examiner have any questions relating to the instant application, the Examiner is invited to telephone the undersigned at (336) 607-7442 to discuss any issues.

Respectfully submitted,

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(Wednesday)

  
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